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Trader
Service
Sheet

Alba 222 'Starlet'

1991

Personal portable radio receiver

Introduction

Starlet, model 222 is a six transistor personal portable radio. It is finished in black and silver, and is complete with wrist carrying cord.

Wavebands covered are l.w. 1200-2000m (250-150kHz) and m.w. 187-565m (1604-531kHz). Reception via an internal ferrite rod aerial assembly.

A maximum output of 300mW is handled with a 1⅞ x 2¾in elliptical loudspeaker of 40Ω impedance and a normally closed miniature jack is fitted for earphone connection. Power is supplied from a 9V battery type PP3 or equivalent.

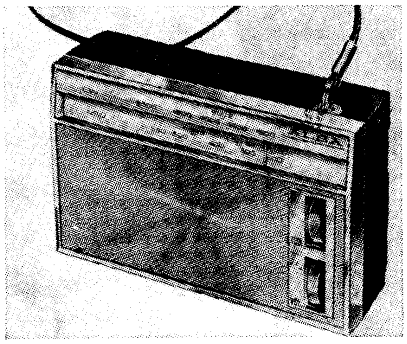
Transistor analysis

Transistor voltages quoted in the table were obtained from information supplied by the manufacturer. They were measured under quiescent conditions with a 20 000Ω/V meter and are all negative with respect to positive line.

Transistor table

Transistor		Emitter (V)	Base (V)	Collector (V)
TR1	2SA321	1·3	1·3	7·8
TR2	2SA203	0·73	0·8	7·8
TR3	2SA202	0·73	0·8	7·8
TR4	2SB185	2·3	2·3	7·0
TR5	2SB187	4·7	4·9	9·0
TR6	2SB187	—	—	4·7

Quiescent current 10mA.



Circuit alignment

Equipment required. – An a.m. signal generator terminated in an r.f. coupling coil and an output meter of 40Ω impedance.
In order to carry out the alignment procedure, it will first be necessary to separate the printed circuit assembly from the panel assembly, as described under 'Dismantling'.

Turn volume control to maximum and connect audio output meter in place of loudspeaker. Maintain output at approximately 50mW by suitably attenuating input signal. This will ensure that a.g.c. action does not mask alignment peaks.

1. – Switch receiver to m.w. and rotate

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Resistors

R1	27kΩ	A1
R2	5·6kΩ	A1
R3	3·9kΩ	A2
R4	150Ω	A1
R5	82kΩ	A2
R6	1·5kΩ	A2
R7	820Ω	A2
R8	3·3kΩ	A2
R9	8·2kΩ	A2
R10	15kΩ	A2
R11	6·8kΩ	A2
R12	1kΩ	B2
R13	2·7kΩ	B2
R14	120Ω	B2
R15	2·7kΩ	B2
R16	120Ω	B2
R17	1·3Ω	B2
R18	1·3Ω	B2
R19	56Ω	B2
R20	220Ω	B2
R21	100Ω	A2
R22	560kΩ	A2
VR1	5kΩ	A2

Capacitors

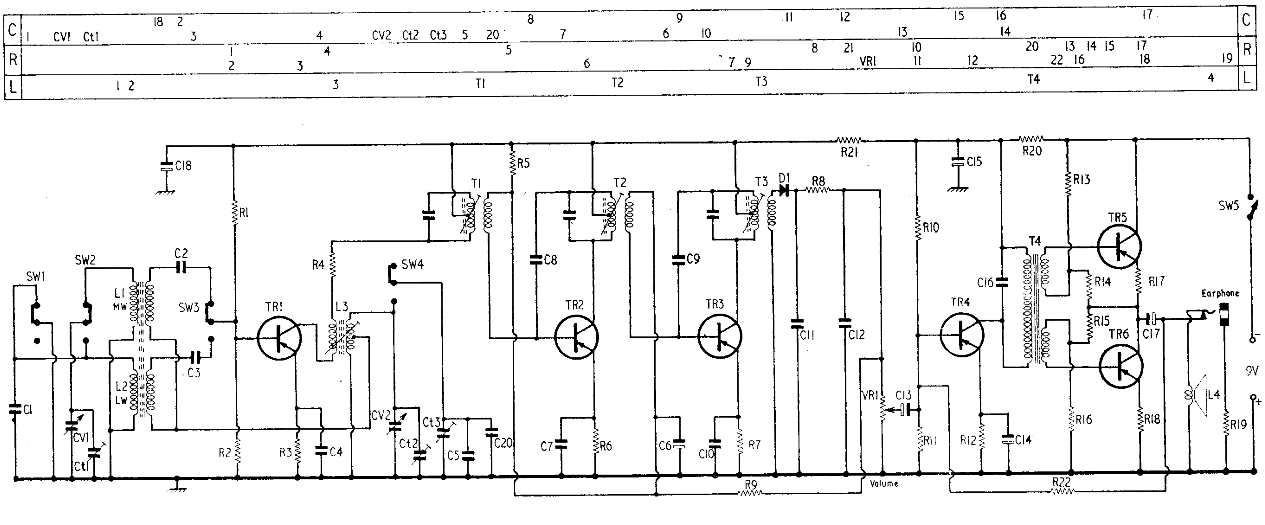
C1	40pF	B1
C2	4,700pF	A1
C3	0·01µF	A1
C4	7,500pF	A1
C5	110pF	B1
C6	30µF	A2
C7	0·04µF	A2
C8	6pF	A2
C9	5pF	A2
C10	0·04µF	A2
C11	0·02µF	A2
C12	0·02µF	A2
C13	5µF	A2
C14	30µF	A2
C15	50µF	B2
C16	7,500pF	A2
C17	50µF	B2
C18	50µF	A1
C20	4pF	B1
Ct1	—	B1
Ct2	—	B1
Ct3	—	B1
CV1	—	B1
CV2	—	B1

Inductors

L1	—	A1
L2	—	B1
L3	—	A1
L4	40Ω	
T1	—	A1
T2	—	A2
T3	—	A2
T4	—	B2

Miscellaneous

D1	1S188	A2
SW1-4	—	B1
SW5	—	B2



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tuning gang to maximum capacitance. Feed in a 470kHz a.m. signal and adjust **T3, T2** and **T1** in that order for maximum output. Then repeat for optimum results.

2. – Alter signal frequency to 520kHz a.m. and adjust **L3** for maximum output.

3. – Rotate tuning gang to minimum capacitance and feed in a 1605kHz a.m. signal. Adjust **Ct2** for maximum output.

4. – Repeat operations 2 and 3.

5. – Tune receiver to 500m and feed in a 600kHz a.m. signal. Adjust position of **L1** on ferrite rod for maximum output.

6. – Tune receiver to 208m and feed in a 1439kHz a.m. signal. Adjust **Ct1** for maximum output.

7. – Repeat operations 5 and 6.

8. – Switch receiver to l.w. and rotate tuning gang to maximum capacitance. Check that calibration is correct – 144kHz Re-tune receiver to high frequency end of band, i.e. minimum capacitance. Feed in 263kHz a.m. signal and adjust **Ct3** for maximum output.

9. – Tune receiver to 1875m and feed in a 160kHz a.m. signal. Adjust position of **L2** on ferrite rod for maximum output.

10. – Tune receiver to 1250m and check calibration is correct – 240kHz.

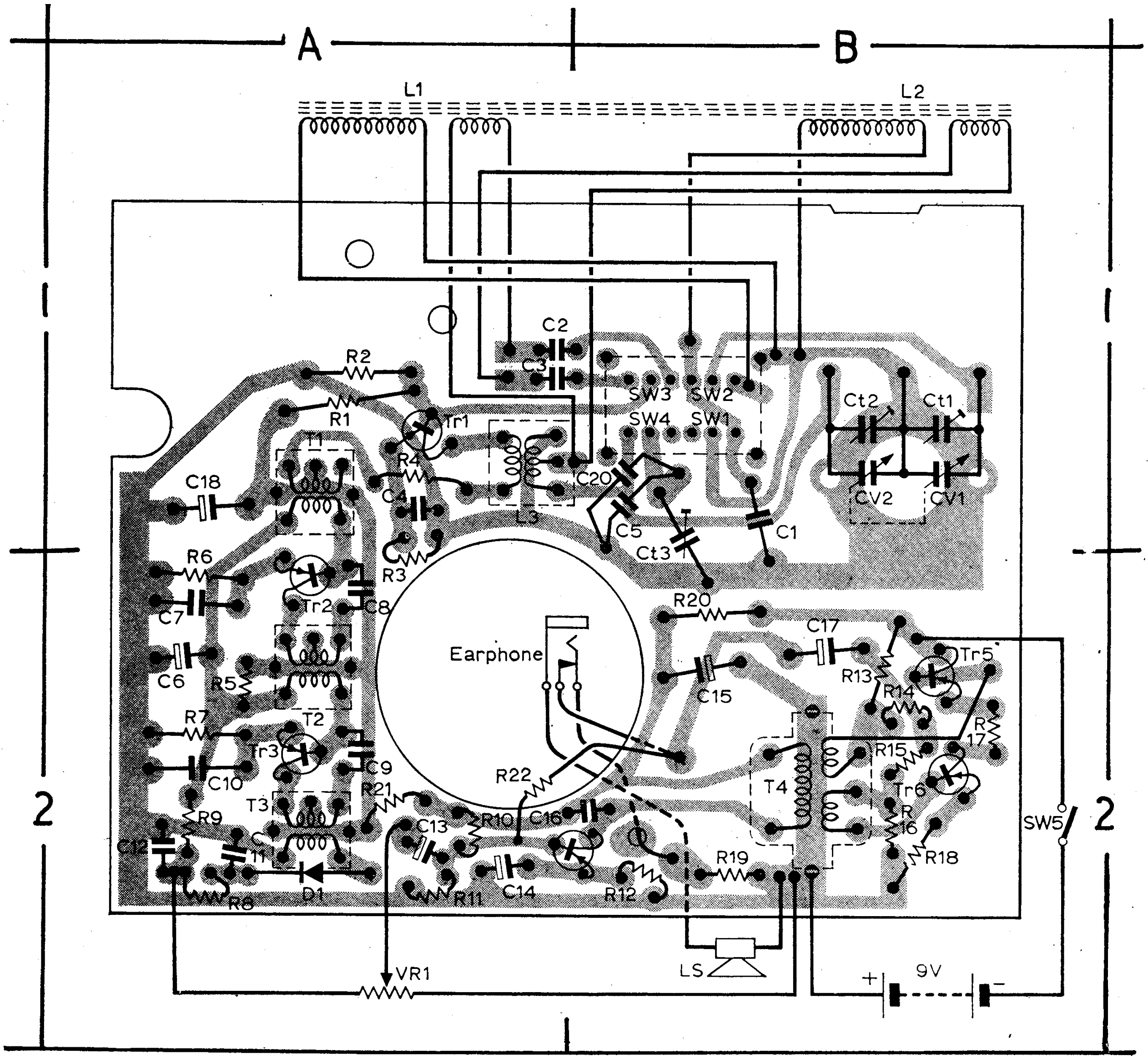
11. – Repeat operations 8-11.

Dismantling

To obtain access to battery, remove battery cover by sliding it off in the direction indicated.

To remove case back, insert screwdriver blade into slot at bottom of case back and turn gently. The back cover will then be released to the extent of the leads to the earphone jack, which may be unsoldered if necessary.

To remove circuit panel assembly from the front panel assembly, unscrew and remove three Phillips-head screws – two securing the scale plate to the case front and the other securing the control knob moulding. The circuit panel can now be removed to the extent of the loudspeaker leads.



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